

Section III

Resource Management Systems

Conservation Planning Process

NRCS's mission is to protect, restore, and improve soil, water, and other resources. NRCS accomplishes that mission by providing technical assistance to landusers to help them develop and implement a Resource Management System (RMS). NRCS only develops two types of conservation plans, Resource Management Systems (RMS) and Progressive Plans. A RMS is a combination of conservation practices and resources, identified by land or water uses, for the treatment of all resource concerns for soil, water, air, plants, and animals that meets or exceeds the quality criteria in the Field Office Technical Guide for resource sustainability. If an individual is unable to protect the resources to a RMS level of treatment at the present time, but may be able to achieve that level of protection in the future, NRCS will provide assistance to implement conservation treatments that achieve some of the resource problems. These treatments are considered a part of "progressive planning" towards a RMS.

Progressive Planning is a continuing process based on the client making decisions in stages on the use and treatment of the planning unit with the potential that all needed decisions will be made at some time in the future. The rate of progress in planning depends on the client's level of understanding, commitment to resource improvement, and financial capability. When the land user cannot meet the requirements of a RMS Plan, the planner may develop a Progressive Plan by considering the economic, social, and cultural conditions in a resource area, if a Progressive Plan is necessary; and the conditions when Progressive Plans will apply.

A Progressive Plan is a combination of conservation practices and management that are part of a RMS Plan, that are feasible within the social, cultural, or economic constraints identified for the resource condition. Progressive Plans are designed to help accomplish societal goals yet avoid undue hardship on landusers in those instances where social, cultural, or economic conditions prevent the feasible achievement of a RMS.

This section provides information for developing RMS's to address concerns associated with soil, water, air, plants, and animal resources. A RMS will be achieved when the standards of resource protection established for the five resources in the quality criteria are met.

Conservation Management Systems Guidance Documents

Conservation Management Systems (CMS) guidance documents are examples of Resource Management Systems (RMS) options to treat the most commonly identified resource problems/opportunities for each locally applicable major land use. They are used to plan both broad categories of land use, such as cropland, pastureland, woodland, wildlife or urban development. More detailed studies are required if small, specific sites are to be developed or used within a given soil delineation. They can be used as a guide to planning more detailed investigation and for avoiding undesirable sites for an intended use.

In developing a CMS guidance document, understanding the following aspects is essential:

- A. An understanding of soil, water, air, plant, animal, and human resources considering the social, economic and cultural constraints and the effects of practices and combination of practices and management associated with each.
- B. A realization that treating one resource problem has positive and negative effects on the other resources and/or their problems. Understanding of the "Conservation Practice Physical Effects" in Section V-A is essential when considering different practices.
- C. An identification of all resource conservation problems associated with soil, water, air, plants and animals on the treatment unit (fields, conservation treatment unit, or other planning area).
- D. The development of a set of practices (CMS options) that treats all of the identified current and potential resource problems to meet the quality criteria described in Section III of the local FOTG.

The following portions of Section III are Guidance Documents that are an illustration of the thought process for formulating CMS options. For each land use, there is a narrative description of the thought process in the selection of practices to solve the identified and predictable resource problems. Following that description are examples that depict the development process of CMS options for a particular situation in the field office area.

These examples describe a particular situation, identify the resource problems, list the practices selected and their effects shown as positive (+), negative (-), no effect (0), facilitating (f), or non-applicable (NA). The MOST IMPORTANT ITEM in the example is

the one entitled "Quality Criteria Met". As practices are selected to treat the identified problems, the problems are checked (☐) when the quality criteria for that problem have been met. **WHEN ALL IDENTIFIED PROBLEMS HAVE BEEN SOLVED TO MEET THEIR QUALITY CRITERIA, A RMS HAS BEEN DEVELOPED.** The effects indicated by +, -, 0, F, or NA serve only as reflections of effects in the thought process and do not indicate when or if the quality criteria have been met.

Formulating CMS Options Using the Effects Concept

One of the first steps in formulating a CMS with a decision-maker is to identify all existing and potential resource problems on the planning area and how they relate to each of the five resources. The effects shown on the Conservation Practice Physical Effects (CPPE) in Section V-A-1 are based on the condition that the practice being evaluated is not presently applied. The user should understand that problems identified in a field or Conservation Management Unit (CMU) occur under present management conditions. Although the physical action or change caused by a practice may be similar between different land uses, the problem will vary greatly.

The effects shown on the CPPE in Section V-A-1 will need to be adjusted for site-specific effects to address the problems identified in the planning process. The Site Specific Practice Effects Worksheet (SSPEW) is used for this. (Refer to Section III - Guidance Documents). In this form the most applicable conservation practices are listed to address the site-specific condition. Once the SSPEW is developed for the land use and resource concerns specified, conservation practices are grouped in combinations and placed on the CMS option worksheet. The different combination of practices becomes CMS option when quality criteria have been achieved.

When a land use change is considered as an option, the effects of practices that cause the land use change are evaluated against present conditions. The effects of the other practices necessary to manage the land use will be evaluated against the potential problems of the new land use.

Example - When a land use conversion from cropland to hayland occurs, sheet and rill erosion would be eliminated but other problems could arise that require treatment. The effects of hay planting should be evaluated for the problems identified on cropland. Practices associated with hayland should be evaluated for problems that may occur on hayland.

The conservation practices shown in the CPPE are to be installed according to NRCS practice standards and specifications contained in Section IV of the Caribbean Area Technical Guide. All CMS utilize the same set of standards and specifications contained in Section IV of the Caribbean Area Technical Guide.

Conservation Management Systems Worksheet

Major agricultural land uses by agro-ecosystem zones is used to describe benchmark conditions and select acceptable conservation practices to develop resource management systems alternatives. This will provide a process to consistently achieve quality resource treatment recommendations on similar soils with similar management and ecosystem conditions. The degree of treatment attained on a Conservation Management Unit (CMU) will be determined by the decision-maker's choice of practices and systems.

CMS' s available in excel spreadsheet format are:

- [AW 272](#) Comprehensive Nutrient Management Plan for Dairy Livestock
- [CO 270Ed](#) Coffee Monoculture in Humid Deep Soils of the Humid Upland
- [HP 273Wv](#) Hayland in Deep Shrink and Swelling Soils of the Semiarid Alluvial Land
- [IP 270Es](#) Grassland in Deep and Moderately Deep Soils of Humid Upland
- [IP 272W](#) Grassland in Deep Gleyed and Friable and Fertile Soils of Alluvial Land
- [LI 270Ed](#) Lily Crop in Deep Soils of the Humid Upland
- [NP 271EC](#) Grassland in Shallow Soils of the Semiarid Volcanic Upland
- [PA 272Ede](#) Pineapple in Deep Reddish Clayey Soils in the Humid Alluvial Land
- [PA 273Ss](#) Pineapple in Deep Gravelly Soils of the Semiarid Alluvial Plain
- [PC 270Ed](#) Citrus-Plantain Intercropping in Deep Soils of the Humid Upland
- [PL 270Ed](#) Plantain Crop in Deep Soils of the Humid Upland
- [PL 270Em](#) Plantain Crop in Moderately Deep Soils of the Humid Upland
- [PL 272W](#) Plantain Crop in Deep Gleyed Soils of the Humid Alluvial Land
- [PL 273Coh](#) Plantain Crop in Deep Friable and Fertile Soils of the Semiarid Alluvial Land
- [PP 271EC](#) Pigeon Pea in Shallow Soils of the Semiarid Volcanic Upland
- [PU 271EC](#) Pumpkin in Shallow Soils of the Semiarid Upland

[PY 270Ed](#) Papaya Fruit Crop in Deep Soils of the Humid Upland

[SG 272W](#) Sugarcane Crop in Deep Gleyed Soils of the Humid Alluvial Land

[VG 270Em](#) Vegetables Crop in Moderately Deep Soils of the Humid Volcanic Upland

[VG 273Wv](#) Vegetables Crop in Deep Shrink and Swelling Soils of the Semiarid Alluvial Land

[YA 270Ed](#) Yam Crop in Deep Soils of the Humid Upland

[YA 270Em](#) Yam Crop in Humid Shallow Upland